



Warm Up Grade 8  
Oct. 20, 2017



The equation of a linear relation is:  $y = -4x + 1$

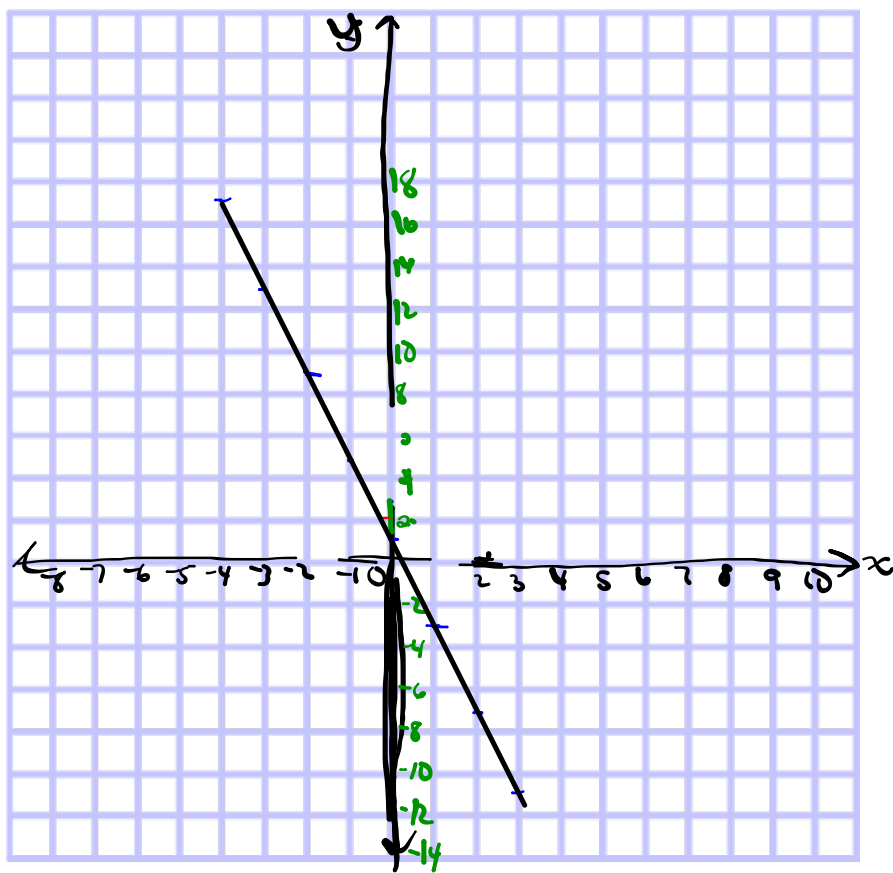
- Create a table of values for the relation for integer values of  $x$  from  $-4$  to  $4$ .
- Graph the relation.
- Describe the relationship between the variables in the graph. *As  $x$  increases by 1,  $y$  decreases by 4*

$$y = -4x + 1$$

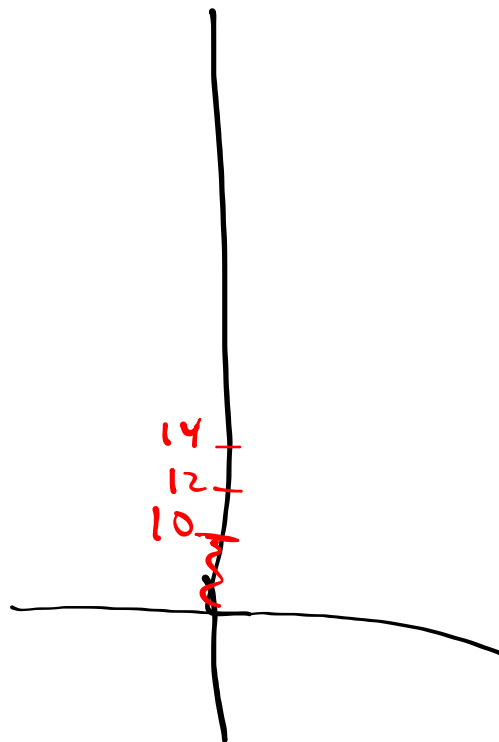
$x = -4$	$x = -3$	$x = -2$
$y = -4(x) + 1$	$y = -4(x) + 1$	$y = -4x + 1$
$= -4(-4) + 1$	$= -4(-3) + 1$	$= -4(-2) + 1$
$= +16 + 1$	$= 12 + 1$	$= 8 + 1$
$= 17$	$= 13$	$= 9$

$x$	$y$
-4	+17
-3	+13
-2	9
-1	5
0	1
1	-3
2	-7
3	-11
4	-15

$\downarrow -4$   
 $\downarrow -4$



x	y
-4	17
-3	13
-2	9
-1	5
0	1
1	-3
2	-7
3	-11
4	-15



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1. No you can not have negatives since you can not have a negative number of girls and boys.
2. You can only have whole number values, so you don't connect the points.
3. The banding would be on opposite sides, and the graph would be the same.

4a)  $y = 4x - 1$

Input	Output
$x$	$y$
0	-1
1	3
2	7
3	11
4	15

$x$  goes up by 1,  
 $y$  goes up by 4.

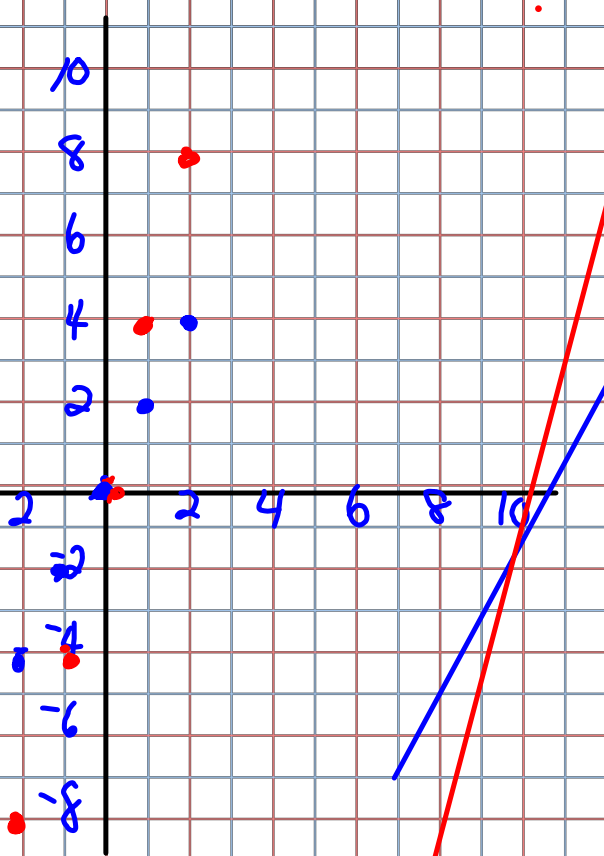
b)  $y = -3x + 9$

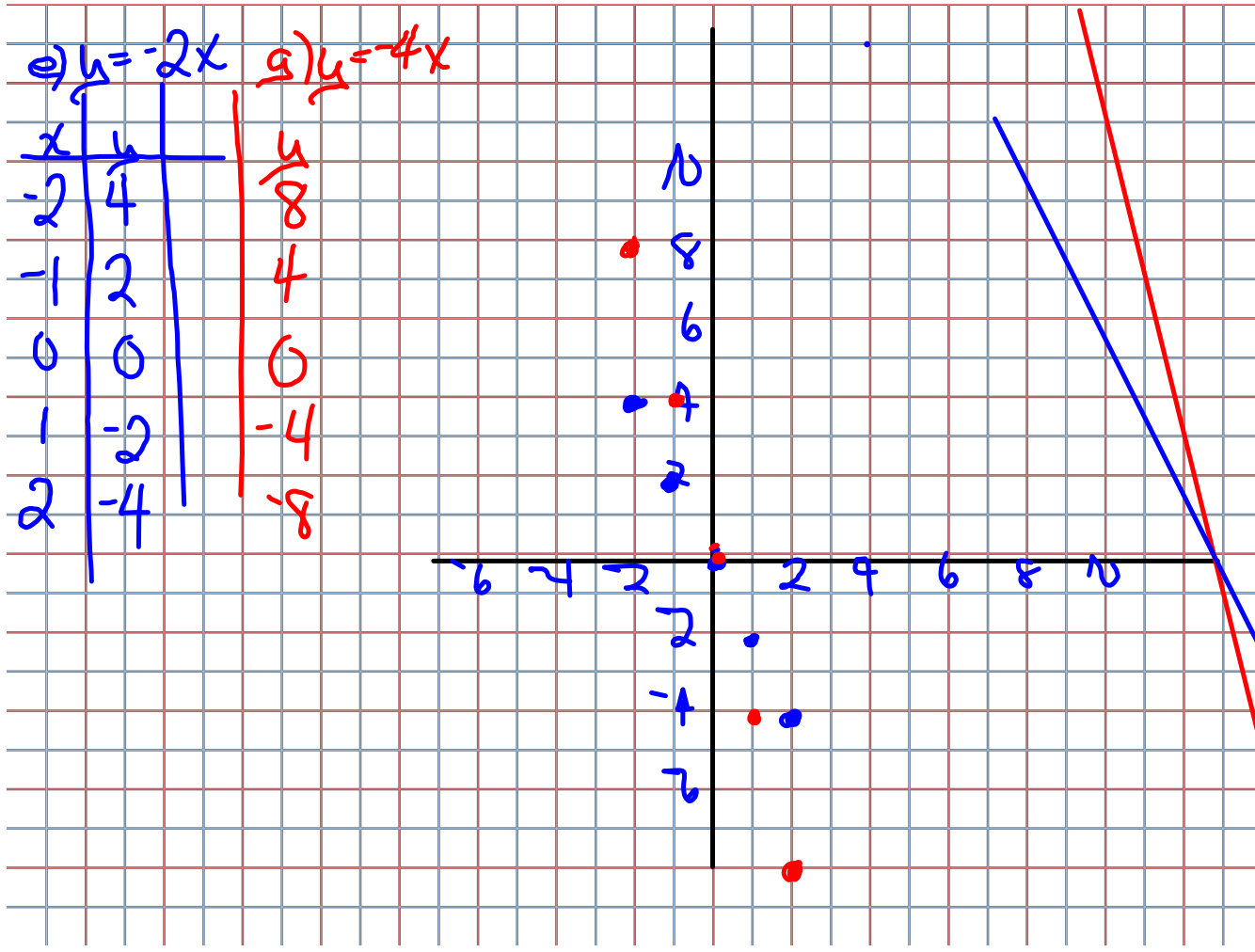
Input	Output
$x$	$y$
0	9
1	6
2	3
3	0

$x$  goes up by 1  
 $y$  goes down by 3  
 (or up -3)

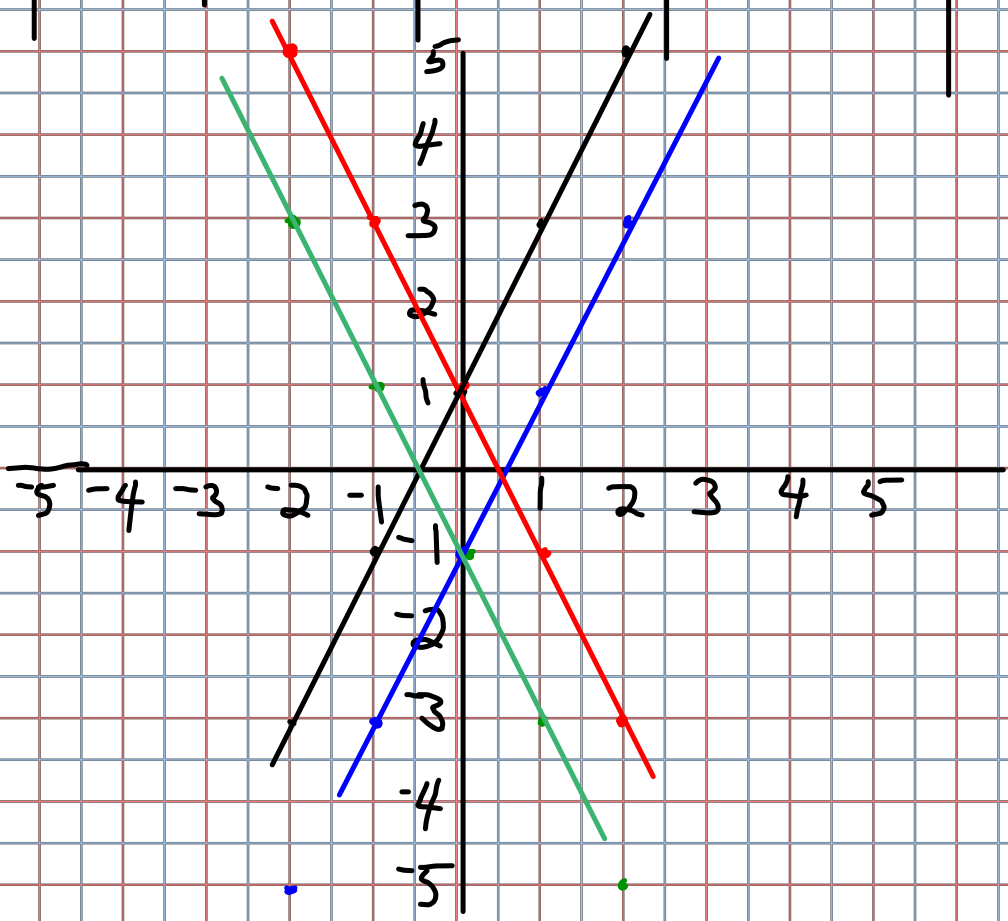
5a)  $y = 2x$        $y = 4x$

$x$	$y$	$y$
-2	-4	-8
-1	-2	-4
0	0	0
1	2	4
2	4	8





6	x	a) $2x+1$	b) $2x-1$	c) $-2x+1$	d) $-2x-1$
	-2	-3	-5	5	3
	-1	-1	-3	3	1
	0	1	-1	1	-1
	1	3	1	-1	-3
	2	5	3	-3	-5



$$7 \quad y = 8x + 3$$

$$(2, \quad)$$

$$\begin{aligned} y &= 8 \times 2 + 3 \\ &= 16 + 3 \\ &= 19 \end{aligned}$$

$$(5, \quad)$$

$$\begin{aligned} y &= 8 \times 5 + 3 \\ &= 40 + 3 \\ &= 43 \end{aligned}$$

$$8. \quad y = -6x - 5$$

$$(-3, \quad)$$

$$\begin{aligned} y &= -6 \times -3 - 5 \\ &= 18 - 5 \\ &= 13 \end{aligned}$$

$$(2, \quad)$$

$$\begin{aligned} y &= -6x - 5 \\ &= -6 \times 2 - 5 \\ &= -12 - 5 \\ &= -17 \end{aligned}$$

$$(\quad, 27)$$

$$(3, 27)$$

from the graph

up  
each  
time

Input	Output
$x$	$8x + 3$
0	3
1	11
2	19
3	27
4	35
5	43

add 8  
each  
time

$$(\quad, 7)$$

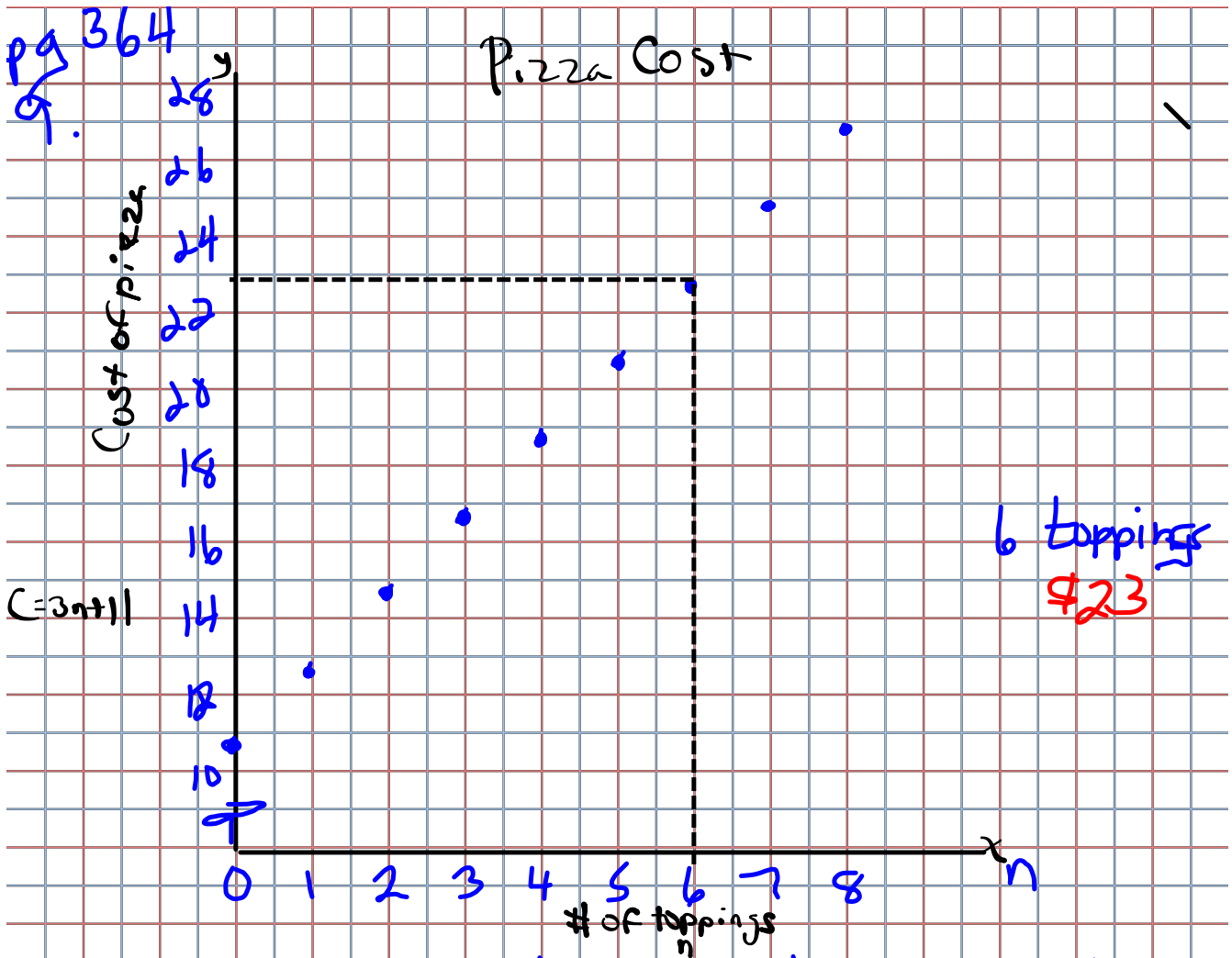
$x = 2$  (using graph)

$$(\quad, -23)$$

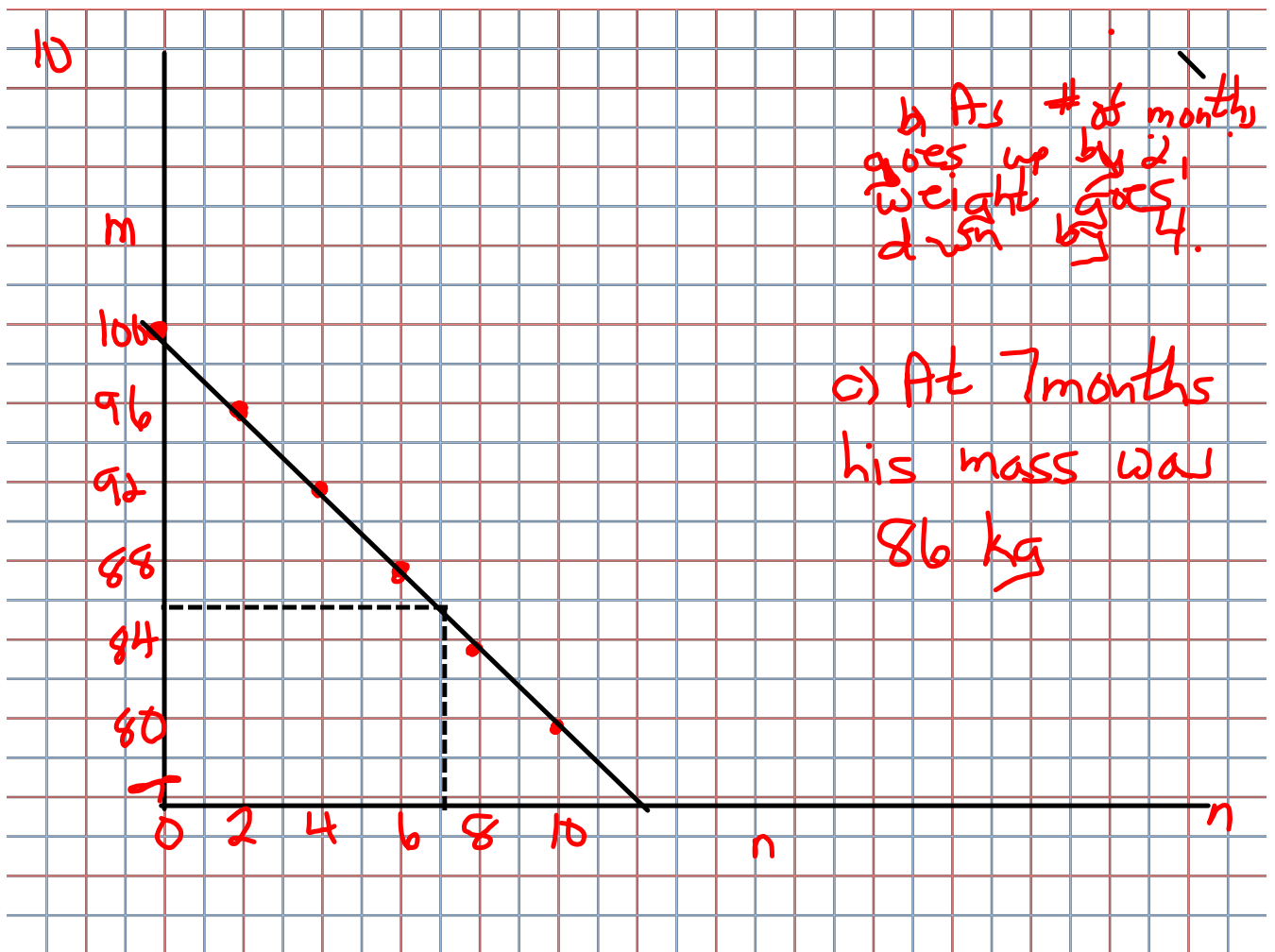
(3, -23) using graph

could have  
used a chart





b) as  $n$  goes up by 1, cost goes up by 3

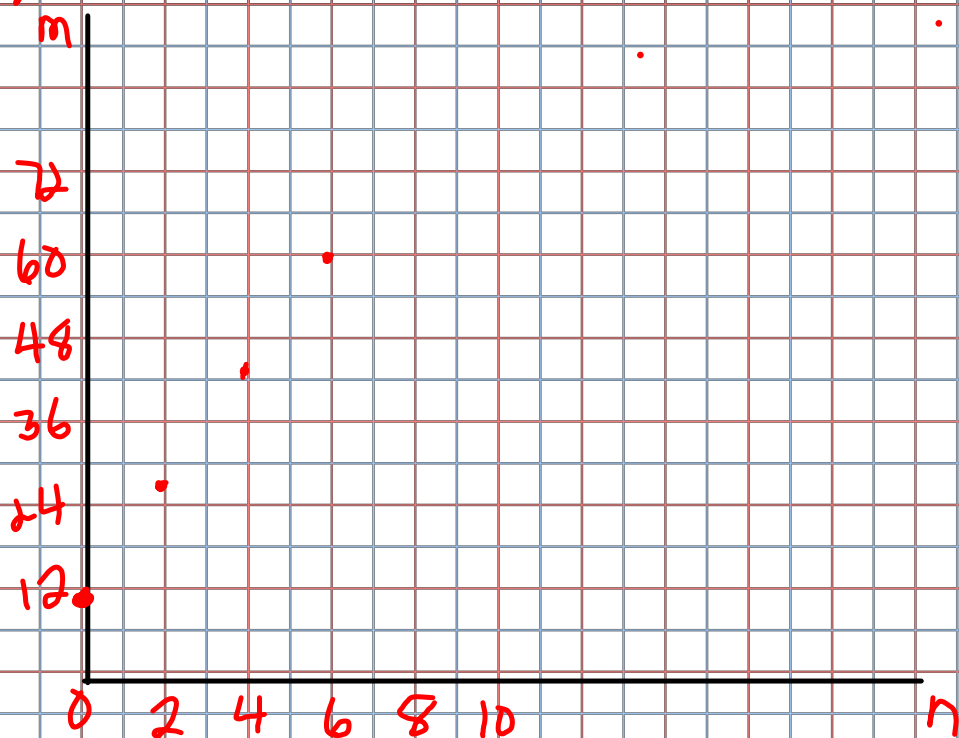


b As # of months goes up by 2, weight goes down by 4.

c) At 7 months his mass was 86 kg

$$11 \quad m = 8n + 12$$

n	m	m
0	12	12
2	28	28
4	44	44
6	60	60



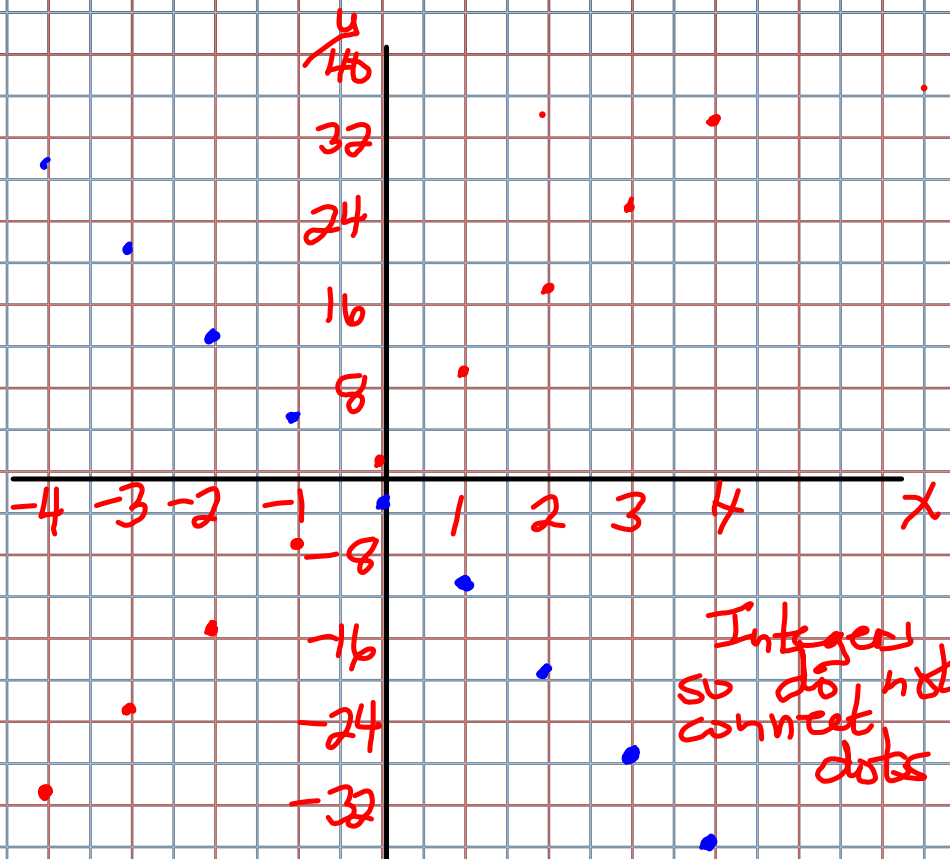
b) As # of people go up by 1

# of marshmallows go up by 8

d) Yes, it linear, the dots would form a straight line

12 a)  $y = 8x + 2$

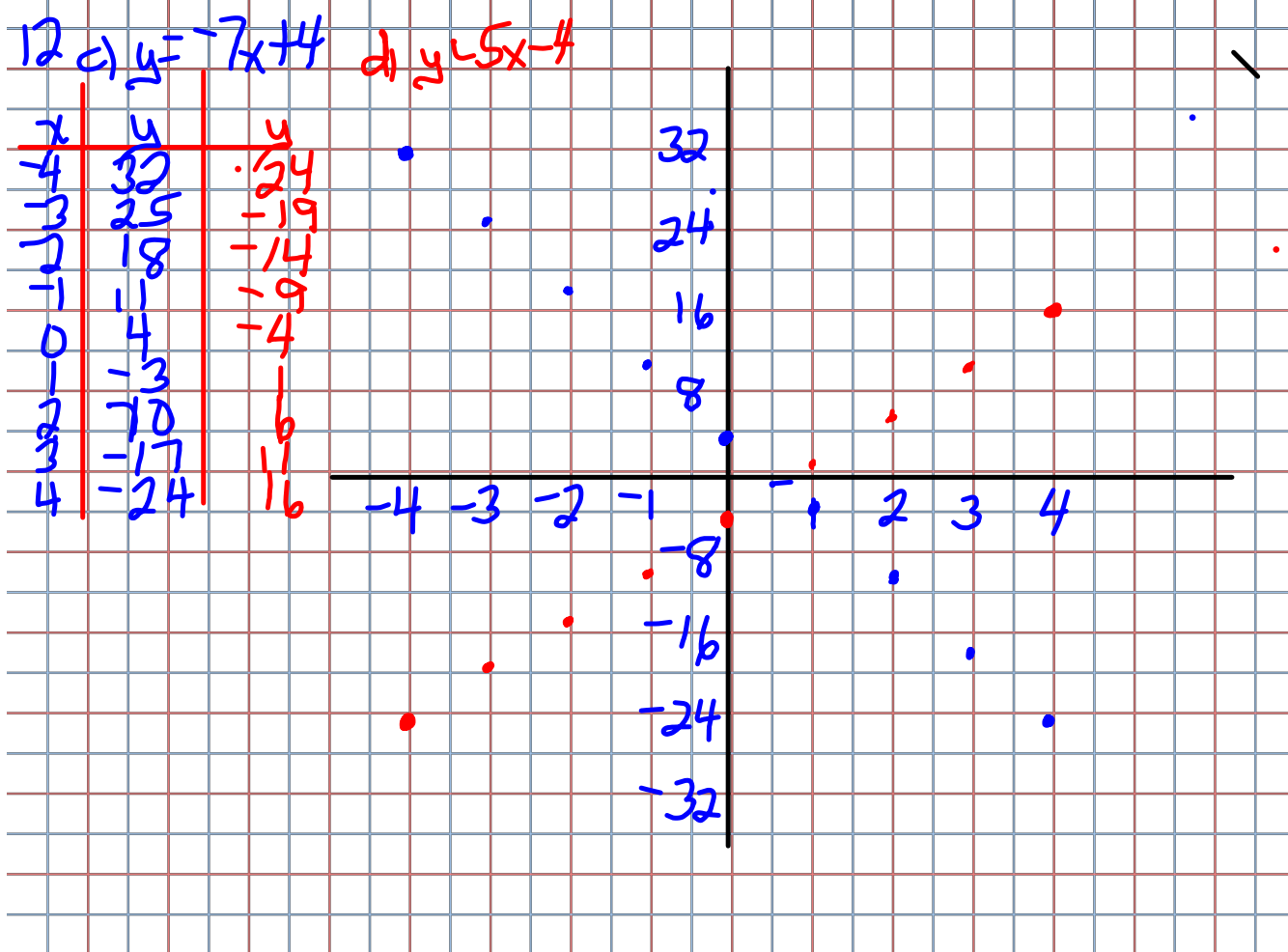
x	y
4	34
3	26
2	18
1	10
0	2
-1	-6
-2	-14
-3	-22
-4	-30

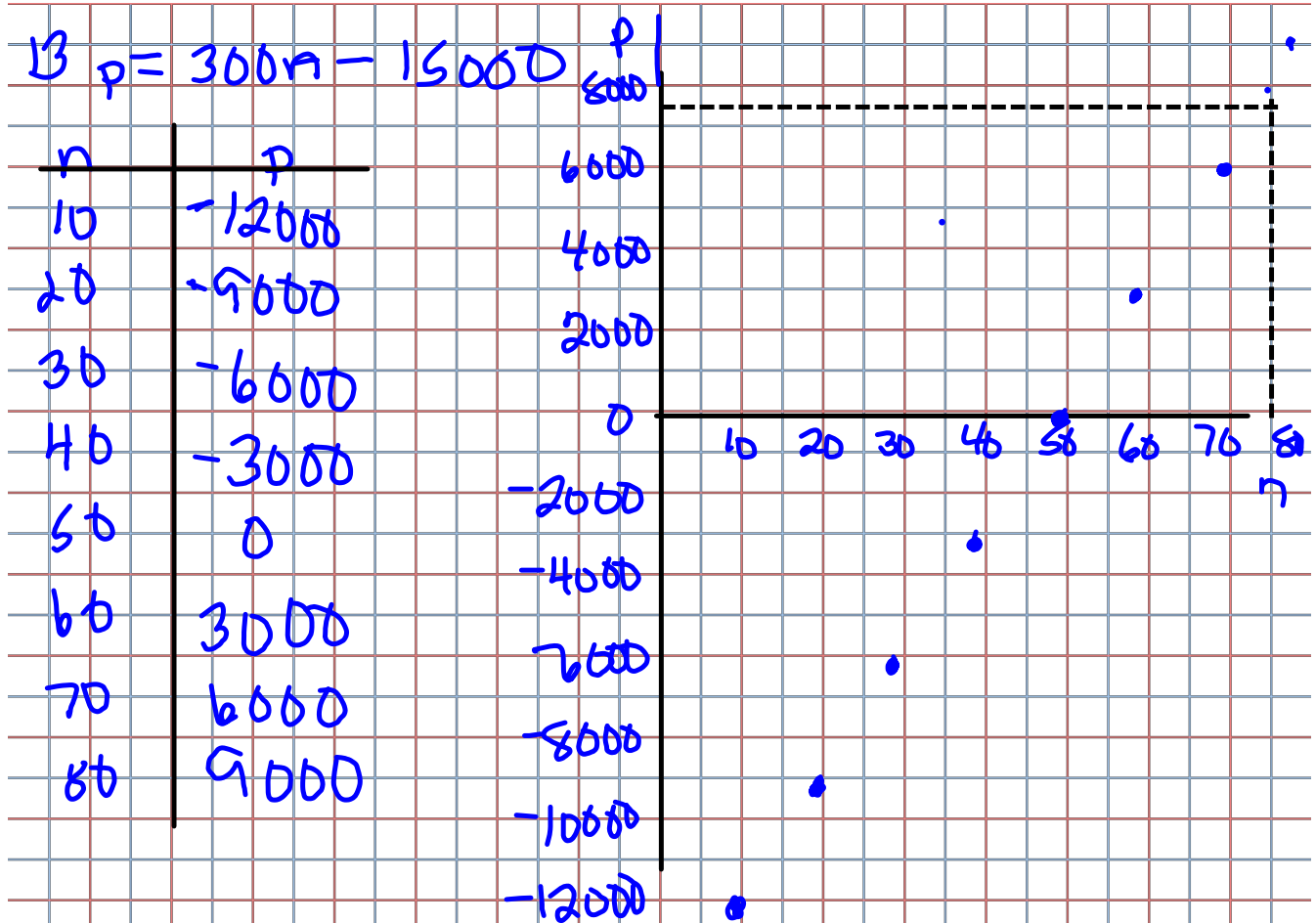


b)  $y = -8x - 2$

x	y
4	-34
3	-26
2	-18
1	-10
0	-2
-1	6
-2	14
-3	22
-4	30

Integers  
so do not  
connect  
dots





- b) - values for  $p$  represent money loss
- c) As # of tickets goes up by 10,  
the profit goes up by 3000.

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18)  $y = -7x + 4$

a)  $(-1, -)$

$$\begin{aligned} y &= -7(x) + 4 \\ &= -7(-1) + 4 \\ &= 14 + 4 \\ &= 18 \end{aligned}$$

b)  $(-1, -)$

$$\begin{aligned} -17 &= -7(x) + 4 \\ -17 - 4 &= -7x + 4 - 4 \\ -21 &= -7x \\ \frac{-21}{-7} &= \frac{-7x}{-7} \\ +3 &= x \end{aligned}$$

c)  $(8, -)$

$$\begin{aligned} y &= -7x + 4 \\ &= -7(8) + 4 \\ &= -56 + 4 \\ &= -52 \end{aligned}$$

d)  $(-, 4)$

$$\begin{aligned} y &= -7x + 4 \\ 4 &= -7x + 4 \\ 4 - 4 &= -7x + 4 - 4 \\ 0 &= -7x \\ \frac{0}{-7} &= \frac{-7x}{-7} \\ 0 &= x \end{aligned}$$

19)  $p = 200 + 40n$

n	p	n=0	n=1	n=2
0	200	$p = 200 + 40(0)$	$p = 200 + 40(1)$	$p = 200 + 40(2)$
1	240	$= 200 + 0$	$= 200 + 40$	$= 200 + 80$
2	280	$= 200$	$= 240$	$= 280$
3	320			
4	360			

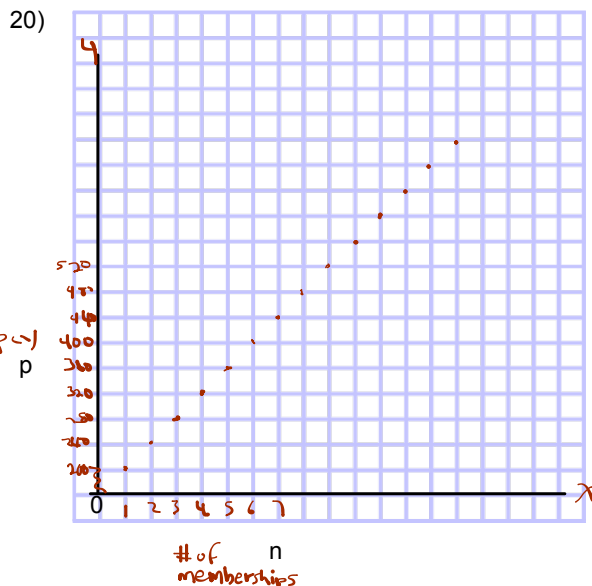
b)  $n = 9$

$$\begin{aligned} p &= 200 + 40(n) \\ &= 200 + 40(9) \\ &= 200 + 360 \\ &= 560 \end{aligned}$$

Francis' pay for the week when he sold 9 memberships is \$560.

$$\begin{aligned} p &= 200 + 40(n) \\ 480 &= 200 + 40n \\ 480 - 200 &= 200 - 200 + 40n \\ 280 &= 40n \\ \frac{280}{40} &= \frac{40n}{40} \\ 7 &= n \end{aligned}$$

Graph  $p = 200 + 40n$



b) When  $n$  increases by 1,  $p$  increases by 40

# Class/Homework

## Practice 6 Making Tables

# 1 to 5

• must show work for  
1st 3 entries

Test Tuesday on Section 6.6 & 6.7

2 MC

1 Short Response (Word problem with equation given)  
Part a to f (Requires to graph)

pg. 364 #12bc, #13

pg. 373 # 18, 19, 20

NEED more (#15, #21, #22)

## Practice 7 Graphing Linear Equations





## Attachments

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Extra Practice 6 creating tables.pdf

Extra Practice 7 graphing linear equations.pdf